WESTMOND WATER SYSTEM (PWSNO 1090152)
SOURCE WATER ASSESSMENT REPORT

February 26, 2003

State of Idaho
Department of Environmental Quality

SOURCE WATER ASSESSMENT FOR WESTMOND WATER SYSTEM

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Westmond Water System, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Westmond Water System* describes factors used to assess susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use inside the delineation boundaries, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Westmond Water System is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should <u>not</u> be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction.

Westmond Water System serves a gas station and convenience store at Westmond, Idaho. A 52-foot deep well with an 8-inch steel casing supplies drinking water to 3 service connections. The well was drilled at an unknown date. No well driller's log is on file with DEQ, so several construction features and details about subsurface geology that are used to assess the risk of contamination are unknown. The last sanitary survey of the Westmond Water System was completed in 1997. No deficiencies in the wellhead and surface seal maintenance were noted during the inspection.

Well Site Characteristics.

Hydrologic sensitivity scores reflect natural geologic conditions at the well site and in the recharge zone. Information for this part of the analysis is derived from individual well logs and from the soil drainage classification inside the delineation boundaries. 6 points out of 6 points possible were marked against the Westmond Water System well in this portion of the analysis.

Soils covering recharge zone delineated for Westmond Water System are moderately well to well drained. Soils in these classifications are less protective of the ground water than soils that drain slowly. The well is known to be relatively shallow. Information about the soil composition above the water table is not available.

Potential Contaminant Inventory.
Land inside the protection zone delineated for Westmond Laundromat is used for commercial and residential purposes. The business center on Westmond road includes a beauty shop, laundromat, RV park, convenience store and gas station. Fuel storage tanks, a potential source of volatile and synthetic organic chemicals, and the diesel pump islands for the gas station are located within 50 feet of the well. Highway 95 and a rail line cross the delineation boundaries. Major transportation corridors are potential sources of every type of regulated contaminant. The RV park, rail line and highway are considered less of a threat to the well because they are located outside of the sanitary setback.

Water Quality History.
Westmond Water System has a good water quality history. In the period from November 1992 thorough August 2002, total coliform bacteria were present in only one quarterly sample. Follow up tests were negative. Nitrate has not been detected in annual testing.

Susceptibility to Contamination.
An analysis of the Westmond Water System well, incorporating information from the public water system file, and the potential contaminant inventory, ranked the well highly susceptible to synthetic and volatile organic chemical contamination because of the fuel storage tanks and diesel service islands about 10 feet from the well. The susceptibility to inorganic chemical and microbial contamination is moderate. Unknown risk factors related to local geology added the most points to the final susceptibility scores. The complete ground water susceptibility work sheet for your system is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection.
This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect water supply resources.

The greatest potential threat to the Westmond Water system well is synthetic or volatile organic chemical contamination originating from a fuel spill. Fuel tanks and a diesel service island are located about 10 feet from the well. Idaho Rules for Public Drinking Water Systems (IDAPA 16.01.08) call for a minimum 50-foot separation distance between a public drinking water well fuel storage facilities. Westmond Water needs to continue working with Panhandle Health District to bring the system into full compliance with the rules. In the meantime, there are some relatively inexpensive measures the system can implement to protect the well. Because it is located adjacent to the fuel island and a paved area, covering the well head to protect it from collision damage and spills should be considered. Drainage off the paved area should be checked and if necessary routed away from the well. The ground near the well can be sloped, but it is important to ensure that at least 12 inches of casing remains exposed above finished grade.

The system should investigate ground water stewardship programs like Home*A*Syst on the web or by phone (608) 262-0024. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic system maintenance, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website to guide systems through the emergency planning process.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

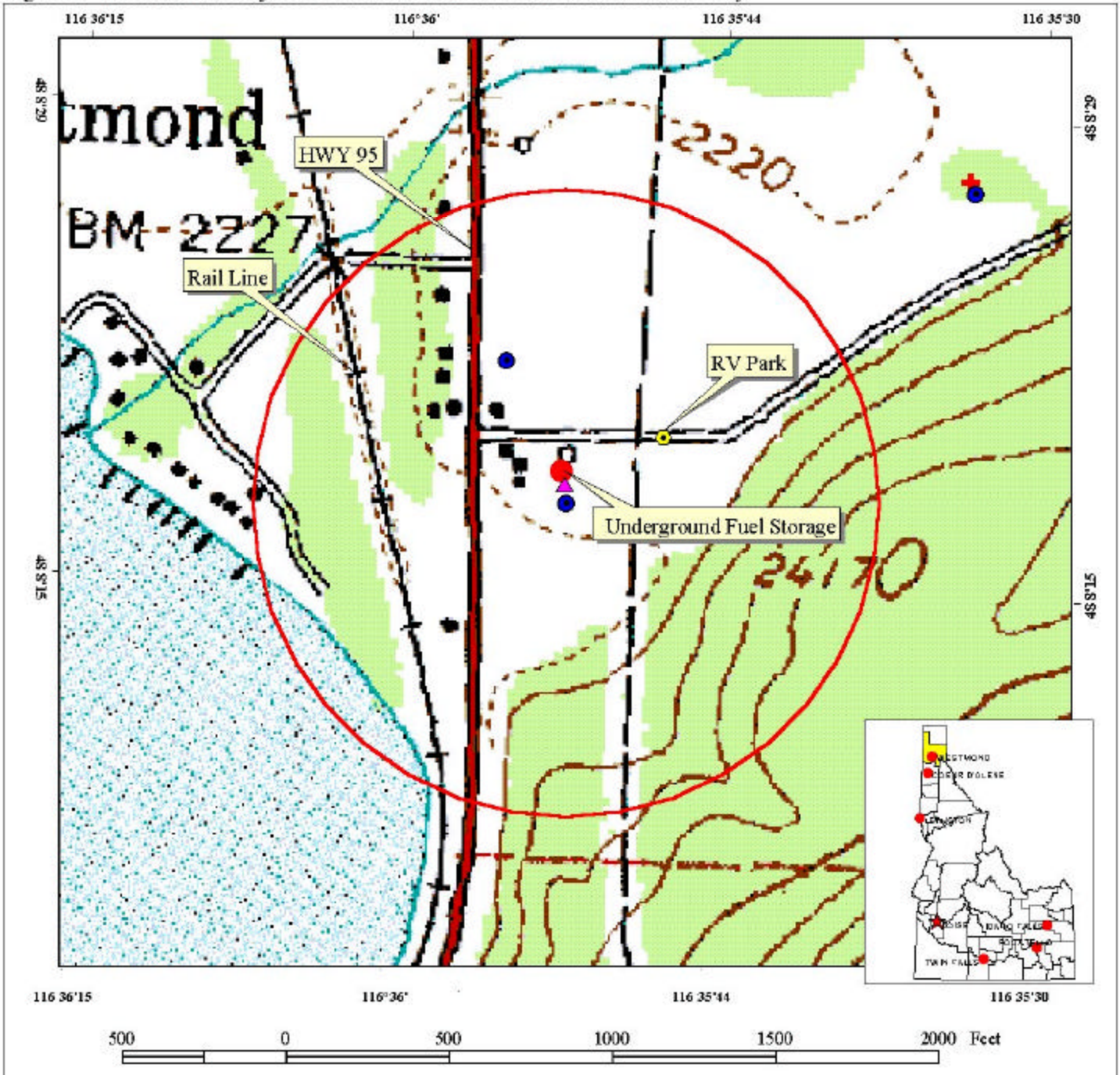
Assistance.
Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office	(208) 769-1422
State IDEQ Office	(208) 373-0502
DEQ Website:	www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001 for assistance with drinking water protection strategies.

Idaho Rural Water Association Website:	www.idahoruralwater.com
Home * A * Syst Website:	www.uwex.edu/homeasyst

Figure 1. Westmond Water System Delineation and Potential Contaminant Inventory.



Legend

Wellhead	RICRIS Site	AST	
Buildings	Business Mailing List	Recharge Point	
Roads	Dairy	SARA Title III Site (EPCRA)	
1000 Foot Buffer Zone	LUST Site	Injection Well	
Mine	UST Site	Group I Site	
Enhanced Inventory	Closed	Cyanide Site	
Toxic Release Inventory	Open	Landfill	
CERCLIS Site	NPDES Site	Wastewater Land App Site	

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS # 1090152
Westmond Water System
Well

12/30/02

Ground Water Susceptibility

Public Water System Name : **WESTMOND WATER SYSTEM** Well # : **WELL #1**

Public Water System Number : **1090152** 12/30/02 8:32:39 AM

1. System Construction		SCORE			
Drill Date	Unknown				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 1997				
Well meets IDWR construction standards	Unknown	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	Unknown	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		**4**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	Unknown	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	Unknown	2			
Total Hydrologic Score		**6**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use		Score	Score	Score	Score
Land Use	SUBURBAN/COMMERCIAL	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	YES. Underground fuel storage tanks	NO	YES	YES	NO
Total Potential Contaminant Source/Land Use Score		**1**	**1**	**1**	**1**
Potential Contaminant / Land Use - 1000-FOOT RADIUS					
Contaminant sources present (Number of Sources)	YES. RV Park, Transportation Corridor	2	2	2	2
(Score = # Sources X 2) 8 Points Maximum		4	4	4	4
Sources of Class II or III leacheable contaminants or Microbials	YES	2	2	2	
4 Points Maximum		2	2	2	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius		**6**	**6**	**6**	**4**
Cumulative Potential Contaminant / Land Use Score		**7**	**7**	**7**	**5**
4. Final Susceptibility Source Score		**12**	**12**	**12**	**12**
5. Final Well Ranking		Moderate	***High**	***High**	Moderate

*High due to presence of fuel tanks and service island inside sanitary setback zone.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
6 - 12 Moderate Susceptibility
> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.